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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,762	01/23/2001	Walter R. Harfmann	0869.073	3754

7590 12/20/2002

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EXAMINER
KUHNS, ALLAN R

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 12/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/768,762	Applicant(s) HARFMANN
	Examiner KUHNS	Group Art Unit 1732

—Th MAILING DATE of this communication appears on the cover sheet beneath th correspondence address—

P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1 - 43 is/are pending in the application.

Of the above claim(s) 18 - 43 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-8, 10-11 AND 14-17 is/are rejected.

☒ Claim(s) 9 AND 12-13 is/are objected to.

☒ Claim(s) 1 - 43 are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Atta hment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☒ Notice of Ref rence(s) Cited, PTO-892

☐ Notice of Draftsperson's Pat nt Drawing Review, PTO-948

☐ Int rvi w Summary, PTO-413

☐ Notice of Informal Pat nt Application, PTO-152

☐ Oth r _____

Office Acti n Summary

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-17, drawn to a method of producing a polymer foam, classified in class 264, subclass 50.

II. Claims 18-43, drawn to an annular die and system for producing a polymer foam, classified in class 425, subclass 4C.

2. The inventions are distinct, each from the other because:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus structure as claimed can be used to practice another and materially different process such as one in which a hydrocarbon blowing agent is used.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art requiring divergent fields of search for the respective inventions, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Wayne Reinke on November 25, 2002 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 18-43 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Japanese reference 29-212234 appears to be missing from the file. Please provide a copy of this reference in response to this Office action in order that the IDS filed on January 23, 2001 may be completely reviewed.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-3 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. Wu et al. disclose the basic claimed method of forming a polymer foam including (1) heating a polymer resin to a melt temperature therefor, (2) selecting at least one blowing agent consisting of at least one ambient gas (column 8, line s 46-47), (3) combining the heated polymer resin with the blowing agent to create a mixture, and (4) extruding polymer foam from the mixture. Wu et al. appear not to state that the quality of foam obtained is comparable in quality to that obtainable by using hydrocarbon blowing agents, but such would have been obvious to one of ordinary skill in the art since Wu et al. disclose hydrocarbon blowing agents as suitable alternatives at column 8, line 50.

Wu et al. disclose or suggest guiding the mixture through an exiting channel to an exit with a cross-sectional area larger than at least one point in the exiting channel, as in claim 2, and a cross-sectional area at least twice as large , as in claim 3 (note fig. 5 and column 18, lines 5-9).

Wu et al. disclose a blowing agent of carbon dioxide or nitrogen, as in claim 14, at column 8, line 46, and physical properties of a foam sheet produced, as in claims 15-17, would have been readily determined through routine experimentation by one of ordinary skill in the art in order to meet process specifications.

8. Claims 4-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. as applied to claims 1-3 and 14-17 above, and further in view of Peters. Peters discloses the coating of an extrusion die with titanium nitride at column 3, line 9. It would have been obvious to one of ordinary skill in the art to incorporate such a coating on the die of Wu et al. in order to enhance the wear resistance of the die. Peters imply that the coating improves the friction coefficient of the die as well at column 3, lines 33-40, as in claims 4 and 10 while acknowledging that nickel plating may be even better in terms of providing a reduced friction coefficient. Wu et al. suggest temperature control, as in claim 5, at column 13, line 8 and temperatures, as in claims 6-7, would have been readily established by one of ordinary skill in the art based on polymer being extruded and blowing agent used. Wu et al. suggest the thermal isolation of claim 8 by placing first and second portions at opposite ends of the exit.

9. Claims 9 and 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Kuhns whose telephone number is (703) 308-3462. The examiner can normally be reached on Monday to Thursday from 7:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan Silbaugh, can be reached on (703) 308-3829. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Allan R. Kuhns

ALLAN R. KUHNS
PRIMARY EXAMINER AU 1732

12-17-02